Catalogue of American Amphibians and Reptiles.

Price, R.M. 1991. *Senticolis, S. triaspis.*

Senticolis Dowling and Fries

Senticolis Dowling and Fries, 1987:202. Type-species, *Senticolis triaspis* Cope 1866, by monotypy.

• **Content.** A single species, *triaspis*, is recognized.

• **Definition.** *Senticolis* is a medium-sized, elongate, anteriorly and posteriorly tapered, long-tailed colubrine snake (*sensu* Dowling et al., 1983). The head is narrow, but distinct from the slender neck. The eye is small to moderate in size and with a round pupil. The genus has a primary row of three elongate temporals, only two of which may touch the postoculars (Fig. 1). The tail is equal to 23-26% of SVL in adult females and 30-35% of SVL in adult males. Dorsal scales are lightly keeled and have indistinct, paired apical pits. The dorsal scale microdermatoglyphic pattern is echinate. Scale counts range from 27+35+19 to 33+39+23, with many combinations of counts between these extremes. The midlateral rows are involved in all additions and reductions. Usually dorsal scale rows VII or VIII are involved with counts of 29 or more, and rows V or VI in lower counts. Ventral scales are slightly angulate laterally and range from 241-264 in males and 256-282 in females, with females tending to have 15.4-20.5 scales more in different populations. The cloacal scute is divided. Paired subcaudals range from 87-110 in females and 95-126 in males, with mean dimorphism varying 13.2-22.2 scutes in favor of males.

The color pattern of the crown of the head, though often broken or obscured in adults, is visible in the young. It is distinctive in having an elongate frontoparietal band with a central opening (Fig. 1).

The 19-24 maxillary teeth (usually 21-22) are recurved and pointed, and subequal in length (smaller posteriorly). The prefrontal bone has a pointed anterior projection almost as long as high.

The hemipenis (Fig. 2) is extremely distinctive. It is 17-19 subcaudals in length and subcylindrical in shape. The proximal one-fifth of the organ is smooth. At the distal point of the smooth region is a pair of long, slightly recurved parabasal hooks, one on either side of the sulcus spermaticus. Three to four rows of similar, but smaller, spines occur distal to the hooks and disappear on the distal half of the organ, where they are replaced by 19-24 oblique rows of papillate calyces, which decrease slightly in size toward the apex, but continue to the end of the organ. The calyces are lozenge-shaped and each of the four sides bears 3-5 stiff papillae. The lips of the sulcus are neither raised nor ornamented.

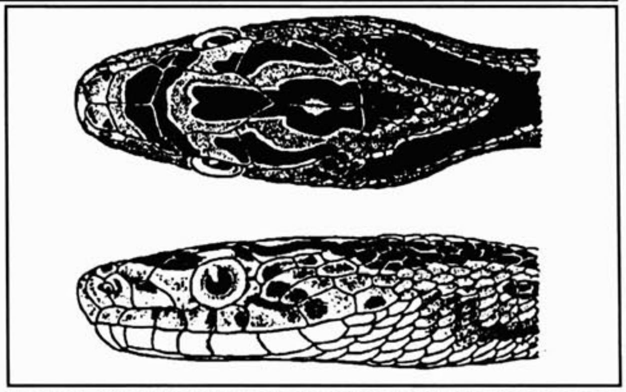
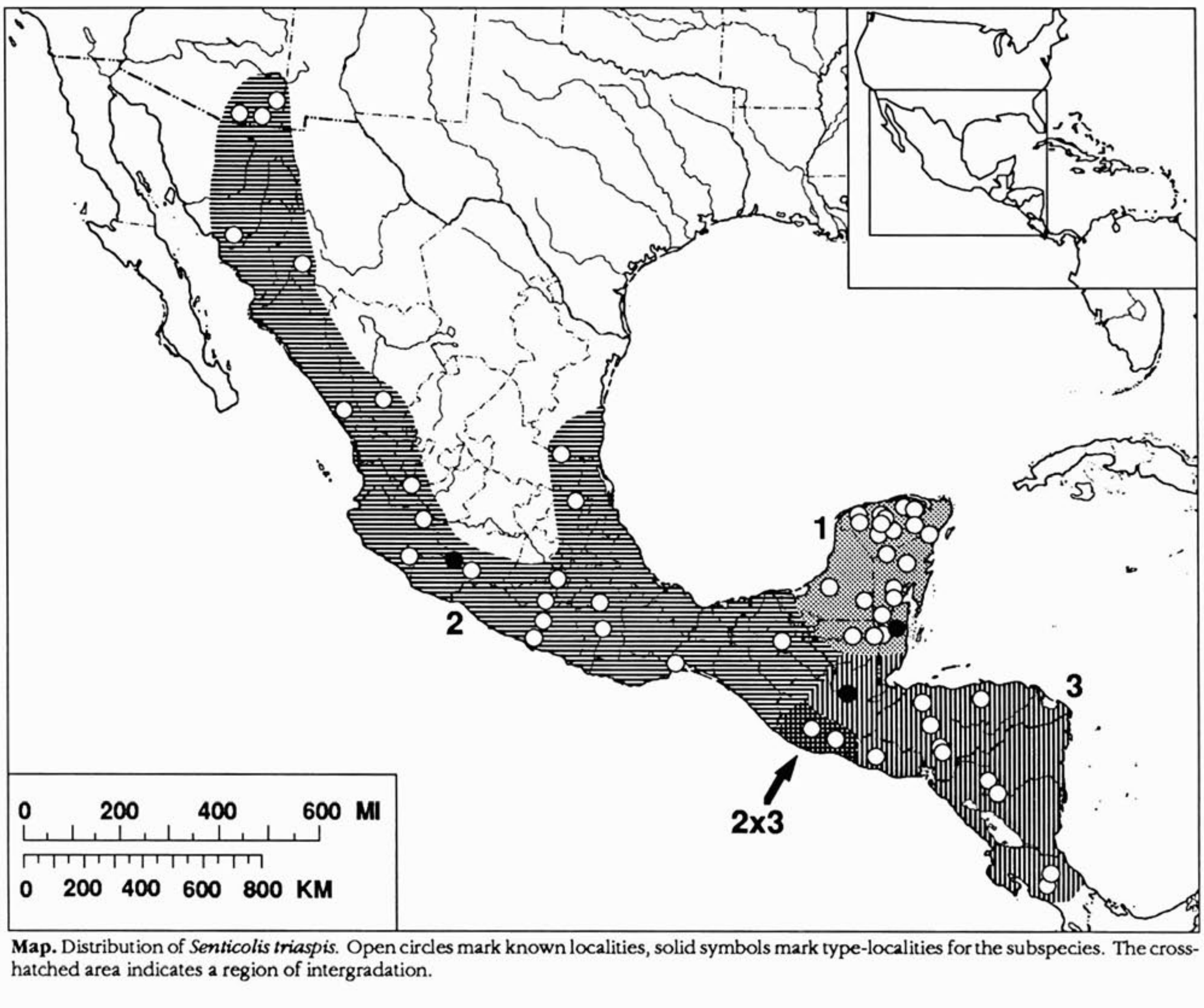


Figure 1. Head of a juvenile *Senticolis t. triaspis*. The three elongate primary temporals are characteristic of the species. Courtesy of Herndon G. Dowling and the New York Zoological Society.



Map. Distribution of *Senticolis triaspis*. Open circles mark known localities, solid symbols mark type-localities for the subspecies. The cross-hatched area indicates a region of intergradation.

• **Diagnosis.** *Senticolis* may be distinguished from all other member of the Lampropeltiini (*sensu* Dowling and Fries, 1987) by its unique hemipenial morphology. With the exception of Asian *Elaphe radiata*, which differ markedly from *Senticolis* in morphology and biochemistry, all related genera have clavate or bilobed hemipenes without distinctive papillate calyces or paired hooks. Additionally, *Senticolis* has a proportionately longer hemipenis than most *Elaphe*, and all *Pituophis*, *Bogertophis*, and *Arizona*, the latter genera generally possessing organs of 10-16 subcaudals in length. *Senticolis* differs from superficially similar members of the Colubrini such as *Gonyosoma*, *Argyrogena*, and most species of *Coluber* and *Spalerosophis* in lacking vertebral or paravertebral scale row reductions.

• **Descriptions and Illustrations.** See species account.

• **Distribution.** See species account.

• **Fossil Record.** None.

• **Pertinent Literature.** The most important papers concerning this genus are Mertens and Dowling (1952), Dowling (1952, 1960), and Dowling and Fries (1987).

• **Etymology.** The name *Senticolis* is from the Latin *sentis*, a thorn or bramble, and *colis*, a penis, in reference to the large spines on the hemipenis. The gender is masculine (Dowling, pers. comm.).

Senticolis triaspis (Cope)
Neotropical Ratsnake or Green Ratsnake

Coluber triaspis Cope, 1866:128. Type-locality, "Belize" (formerly British Honduras), restricted to the city of that name by Smith and Taylor (1950). Holotype, USNM 24903, a juvenile male, collected by Dr. Parsons, date of collection unknown (not examined by the author).
Elaphe triaspis: Amaral, 1930:159.
Senticolis triaspis: Dowling and Fries, 1987:202.

• **Content.** Three subspecies are recognized: *triaspis*, *intermedius*, and *mutabilis*.

• **Definition and Diagnosis.** See the generic account.

• **Descriptions.** The original description was provided by Cope (1866). Schmidt and Andrews (1936) gave details of scutulation, as did Gaige (1936), who also described the hemipenis. Schmidt (1941) gave the scutulation of the type specimen. Mertens and Dowling (1952) and Dowling (1952) provided general descriptions. The most comprehensive description, including meristic charts, illustrations, and range maps, is that of Dowling (1960), much of which is summarized in the reclassification of the genus (Dowling and Fries, 1987). A recent description is included in Wilson and Meyer (1985).

• **Illustrations.** A photograph of the type-specimen of *Senticolis triaspis intermedius* appeared in Mertens and Dowling (1952). A photograph of a live specimen was included in Dowling (1960), as well as an illustration of an everted hemipenis, and dorsal and lateral sketches of the head. Wright and Wright (1957) presented several photographs of *S. triaspis intermedius*. Color photographs of *intermedius* are in Shaw and Campbell (1974) and Behler and King (1979). Smith and Brodie (1982) and Stebbins (1985) provided colored illustrations of *intermedius*. Mehrtens (1987) showed a head close-up of *intermedius*. A photograph of the microdermatoglyphic pattern is in Price (1981). Detailed hemipenial illustrations appeared in Dowling and Fries (1987).

• **Distribution.** *Senticolis triaspis* has a broad geographic distri-bution, ranging from southeastern Arizona and southern Tamaulipas southward through México and much of Central America to Costa Rica. The elevational range is from near sea level to over 2200 m.

• **Fossil Record.** None.

• **Pertinent Literature.** Much of what has been written about this species concerns taxonomy and distribution. The primary sources of information are Mertens and Dowling (1952), Dowling (1952, 1960), and Dowling and Fries (1987). Earlier references, including description of scutulation, include Boettger (1883), Cope (1885, 1900), Bocourt (1888), Boulenger (1894, 1896), Günther (1894), Werner (1896), Oliver (1937), Hartweg and Oliver (1940), Taylor and Knobloch (1940), Smith (1943), and Taylor (1951). Subspecific relationships were discussed by Barbour and Cole (1906), Smith (1941), and Stuart (1948). Descriptions of young were provided by Taylor (1940), Smith (1941), and Woodbury and Woodbury (1944). The first occurrence of this species in the United States was documented by Stone (1911). Wright and Wright (1957) gave information on identification and coloration, and included some taxonomic notes. Dowling (1958) compared dorsal scale reductions and osteological features of this species with those of *Gonyosoma*. Shaw and Campbell (1974) discussed the identification and habitat of the species in Arizona. Lawson and Dessauer (1981) provided data that support the separation of *triaspis* from *Elaphe*, based on electrophoretic evaluation of proteins. Dowling and Price (1988) discussed the differences from *Bogertophis* and the proposed taxonomic status within the Lampropeltiini. Wilson and Meyer (1985) described the species in Honduras, provided a range map, and differentiated the subspecies. A brief description, including identification, natural history, and care in captivity of *S. triaspis intermedius* appeared in Mehrtens (1987). The taxon appears in many checklists, keys, notes, and summary accounts, including those of Cope (1887, 1892), Gadow (1905), Stejneger and Barbour (1917), Van Denburgh (1922), Blanchard (1925), Amaral (1930), Andrews (1937), Smith (1938, 1943), Hartweg and Oliver (1940), Smith and Taylor (1945), Perkins (1949), Taylor (1949), Stuart (1950, 1963), Hall (1951), Mertens (1952a), Martin (1955, 1958), Alvarez del Toro and Smith (1956), Duellman (1957), Cagle (1968), Behler and King (1979), Lee (1980), Parmerlee and



Figure 2. Right hemipenis of *Senticolis triaspis*, UMMZ 118522, 15+ subcaudals in length. The specimens was not completely everted and would have extended at least two subcaudals further in life. Courtesy of F. Waite Gibson.

Powell (1980), Ballinger and Lynch (1983), and Stebbins (1985).

• **Etymology.** The name *triaspis* is derived from the Greek *aspis*, meaning "shield," and *treis*, meaning "three," in apparent reference to the three elongate primary temporal head scutes.

• **Remarks.** The natural history of this species remains poorly known. The majority of specimens have been taken in montane mesophytic forests along the slopes of the Mexican highlands and in Central America. In western and southern México, it may be found in more xeric thorn forest. The elongate habitus, small eyes, and angulate ventrals have led to the supposition that the species is arboreal, but few sightings are available to support this contention, and many specimens have been collected on roads and trails. The principal prey of *S. triaspis* appears to be rodents, although it also eats birds. It has recently been bred in captivity (K. Tepedelen, in litt.).

The three subspecies of *S. triaspis* were previously assigned by various authors totally or in part to the three species *Elaphe triaspis*, *E. chlorosoma*, and *E. mutabilis*. Smith (1941) suggested that, based on similarities in scutellation, the name *Coluber mutabilis* Cope was based on an albino specimen of *E. triaspis*, and placed it in the synonymy of the latter. Stuart (1948) resurrected *mutabilis* as a valid subspecies, ranging from the Péten Forest in Guatemala southward to Costa Rica on the Caribbean side of Central America. The specimen designated as the holotype of *Pityophis intermedius* by Boettger (1883) was shown by Mertens and Dowling (1952) to belong to the taxon previously known as *Elaphe chlorosoma* Günther (1894); thus the latter well-known name, which often appears in the literature, was placed in the synonymy of *intermedius*.

1. *Senticolis triapis triaspis* (Cope)

Coluber triaspis Cope, 1866:128. See species account.
Natrix triaspis: Cope, 1887:71.
Scotophis mutabilis: Bocourt, 1888:680 (part).
Elaphe triaspis triaspis: Stuart 1948:69.
Senticolis triaspis triaspis: Dowling and Fries, 1987:202.

• **Diagnosis.** This subspecies is characterized by a median frontoparietal band and a small, rounded, pale spot at or near the middle of the interparietal suture. A blotched pattern is retained into adulthood.

2. *Senticolis triaspis intermedius* (Boettger)

Pityophis intermedius Boettger, 1883:148. Type-locality, "Mexico," restricted to Hacienda El Sabino, Michoacán, México by Dowling (1960). Holotype, Senckenberg Museum (SMF) 34575, a juvenile male from the collection of Dr. Pagenstecher, date of collection unknown (not examined by author).
Coluber mutabilis: Cope, 1885:175 (part).
Natrix mutabilis: Cope, 1887:71 (part).
Scotophis mutabilis: Bocourt, 1888:680 (part).
Coluber chlorosoma Günther, 1894:115. Type-localities, "Mexico, Atoyac in Vera Cruz, Amula in Guerrero, San Ramon" (Jalisco), restricted to Amula (= Almolonga), Guerrero by Dowling (1960). Lectoholotype, British Museum (Natural History) 1946.1.12.99, a male, collected by H.H. Smith, date of collection unknown (not examined by author). Dowling (1960) cites this individual as specimen "b" in Boulenger (1894). It is one of the three inferred Günther cotypes.
Elaphe chlorosoma: Stone, 1911:231.
Elaphe mutabilis: Taylor, 1940:459. First use of this combination (*non C. mutabilis* Cope, 1885).
Elaphe triaspis intermedia: Mertens and Dowling, 1952:197.
Senticolis triaspis intermedia: Dowling and Fries, 1987:202.

• **Diagnosis.** This subspecies is characterized by juveniles with a median frontoparietal band with a central opening extending forward to the posterior end of the frontal scute, and with 80 or more total blotches. The adults are unicolor green dorsally.

3. *Senticolis triaspis mutabilis* (Cope)

Coluber triaspis: Cope, 1879:271 (*non C. triaspis* Cope, 1866).
Coluber mutabilis Cope, 1885:175 (part). Type-locality, "Vera Paz," Guatemala, restricted to Alta Verapaz highlands of Guatemala by Stuart (1948). Holotype, USNM 6745, an adult female, collected by Henry Hague, date of collection unknown (not examined by author).
Natrix mutabilis: Cope, 1887:71 (part).
Scotophis mutabilis: Bocourt, 1888:680.
Coluber polylepis: Werner, 1896:247. Type-locality, "Honduras." Illustrated on pl. 6, additional type data unknown.
Elaphe triaspis mutabilis: Stuart, 1948:68.
Elaphe triaspis intermedia: Mertens, 1952b:93.
Senticolis triaspis mutabilis: Dowling and Fries, 1987:202.

• **Diagnosis.** This subspecies is characterized by juveniles with fewer than 80 total blotches, and with a median frontoparietal band with an elongate central opening. The band is usually broken at the frontoparietal suture. The adults are uniform pale brown dorsally.

• **Remark.** The holotype was mistakenly given as USNM 6735 in the original description.

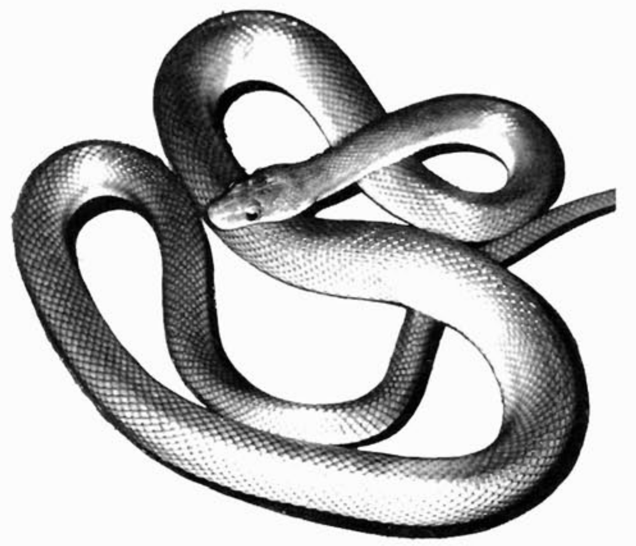


Figure 3. *Senticolis triaspis intermedius* from the Chiracahua Mountains of Arizona. Photograph by Sam Dunton of a living specimen collected by James A. Oliver.

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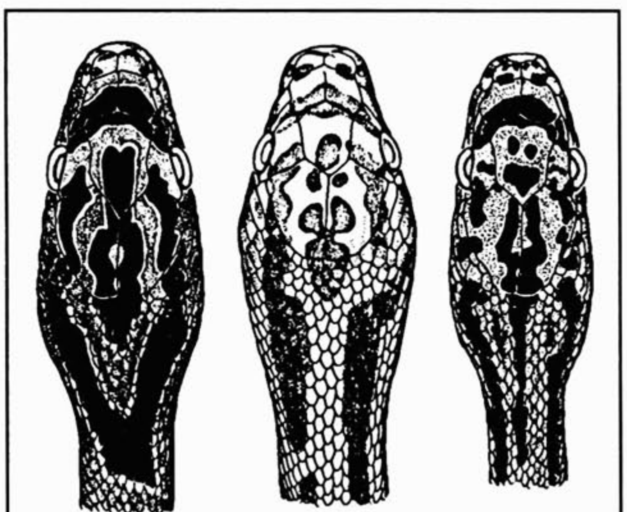


Figure 4. Subspecific variation in the head pattern of *Senticolis triaspis* as seen in juvenile snakes: a. *Senticolis t. triaspis*, b. *S. t. mutabilis*, c. *S. t. intermedius.* Courtesy of Herndon G. Dowling and the New York Zoological Society.

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Robert M. Price, Department of Biology, New York University, New York, NY 10003.

Primary editor for this account, Larry David Wilson.

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